DOCUMENT RESUME

ED 388 710 TM 024 157

AUTHOR Norback, Judith Shaul; And Others
TITLE Job Analysis of the Knowledge Important for Newly Licensed Physical Education Teachers. The Praxis Series: Professional Assessments for Beginning Teachers.
INSTITUTION Educational Testing Service, Princeton, N.J.
REPORT NO ETS-RR-93-23
PUB DATE Apr 93
NOTE 98p.
PUB TYPE Reports - Evaluative/Feasibility (142) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS Administrators; *Beginning Teachers; College Faculty; Content Validity; Elementary Secondary Education; *Job Analysis; *Knowledge Base for Teaching; Licensing Examinations (Professions); Minority Groups; Physical Education; *Physical Education Teachers; Teacher Certification; *Test Construction
IDENTIFIERS Praxis Series; *Subject Content Knowledge; Test Specifications

ABSTRACT

A job analysis was conducted of the knowledge important for newly licensed or certified physical education teachers. The results of the analysis were to be used to develop specifications for The Praxis Series: Professional Assessments for Beginning Teachers and to support the content validity of the assessment. An initial draft domain of knowledge was constructed by Educational Testing Service test development staff. The draft domain was reviewed by five physical education teachers. A revised draft was then reviewed by a nine-person external review panel of educators. The resultant third draft was reviewed by a nine-person advisory committee of teachers, teacher educators, and an administrator. The final version was subjected to verification through administration to 815 physical education teachers, administrators, and college faculty and a supplementary group of 410 minority physical education teachers. Participants rated the knowledge statements for importance above or below a cut-point. Results indicated that 21 of the 149 developed knowledge statements did not meet the cut-point. Results of the job analysis identified 128 knowledge statements judged important enough to be the basis for test specifications. Six appendixes provide supplemental information including the survey instrument. (Contains eight tables and five references.) (SLD)

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THE PRAXIS SERIES
Professional Assessments for Beginning Teachers™

Job Analysis of the Knowledge Important for Newly Licensed Physical Education Teachers

Judith Shaul Norback
Patricia A. Bukatko
Michael Rosenfeld
Richard J. Tannenbaum
Diane Wattay

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Acknowledgments

The authors wish to thank the ETS Test Development staff members Jim Hessinger and Sam Bocchieri for their help with this project. We also appreciate the assistance provided by the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD), the National Association for Sport and Physical Education (NASPE), and the Ethnic Minority Council of the Association for Research, Administration, Professional Councils and Societies. The committee members serving in various capacities were extremely helpful, and we would also like to express our appreciation to the teachers, teacher educators, and administrators who completed the survey. Our special thanks to Lorraine Carmosino and Cindy Hammell for their administrative support, and to Scott Wesley and Anne Reynolds for their suggestions and advice.

A Job Analysis of the Knowledge Important for Newly Licensed Physical Education Teachers

Executive Summary

J. Shaul Norback, P. Bukatko, M. Rosenfeld, R.J. Tannenbaum, and D. Wattay

The purpose of this study was to conduct a job analysis of the knowledge important for newly licensed/certified physical education teachers. The results of this job analysis will be used to develop specifications for the physical education assessment of The Praxis Series: Professional Assessments for Beginning Teachers ™ and to support the content validity of this assessment.

An initial draft domain of knowledge was constructed by Educational Testing Service (ETS) Test Development staff with subject-matter expertise in physical education and ETS Research staff with expertise in job analysis. In the process of developing the draft domain, ETS subject-matter experts reviewed state licensure/certification requirements, current test specifications, current test items, and relevant professional literature. This initial draft domain was then reviewed by a group of five New Jersey and Pennsylvania teachers. After their suggested revisions were made, a second draft of the domain was reviewed by a nine-person external review panel consisting of educators (four teachers, one administrator, and four teacher educators).

The resultant third draft was then reviewed by a nine-person Advisory/Test Development Committee. This committee was comprised of elementary, middle, and secondary school teachers (n=4), teacher educators (n=4), and a state administrator with expertise in physical education. This committee also had representation by race/ethnicity, sex, and geographic region. The primary purpose of the committee was to modify the draft domain so that it accurately reflected what the members of the committee believed were the knowledge domains important for newly licensed/certified physical education teachers. This modification process occurred during a two-day meeting held at ETS. Minor wording changes were made. Some knowledge statements were deleted and others were added. The final domain consisted of five major knowledge areas and 149 knowledge statements. The five major knowledge areas were: (1) *Historical, Philosophical, and Sociological Foundations*; (2) *Scientific Foundations*; (3) *Concepts Relating to Motor Skills/Fitness/Sport*; (4) *Health and Safety*; (5) *Pedagogy Specific to Physical Education*.

The final domain was placed in survey format and subjected to verification through a national survey of 815 educators (physical education teachers, administrators, and college faculty). This primary group of survey participants was randomly selected from the membership of the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD). A supplementary group of 410 minority physical education teachers was also included in the survey to increase the likelihood that a sufficient number of responses from minority educators

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would be available to reflect their perspectives on the job of a newly licensed physical education teacher. This group was randomly selected from the membership of the Ethnic Minority Council of the Association for Research, Administration, Professional Councils and Societies.

The survey participants were asked to rate the knowledge statements in terms of *importance* for newly licensed/certified physical education teachers to perform their job in a competent manner. The purpose of the survey administration was to: (1) confirm that the Advisory/Test Development Committee had defined domains of knowledge important for newly licensed/certified physical education teachers and (2) identify a core of important knowledge relevant for all groups of newly licensed/certified physical education teachers. This latter objective is accomplished by analyzing the importance ratings by various subgroups of respondents (e.g., males and females). Knowledge statements that are judged to be important by all relevant subgroups of respondents form the core. This core is a primary source of information in the development of assessment specifications and substantially contributes to the evidence in support of the content validity of the assessment.

A cut point of a mean importance rating of 2.50 (the midpoint between moderately important (scale value 2) and important (scale value 3)) was established to identify the core of important knowledge statements. Statements that were judged, by the total group of survey respondents and all relevant subgroups of respondents, to be 2.50 or higher constituted the core, and therefore, were considered eligible for inclusion in the development of assessment specifications. (However, because the survey participants were not involved in the development of the knowledge domain, they may lack certain insights that the Advisory/Test Development Committee members have due to their high level of involvement in the definition of the domain. As a consequence, if the committee believes that a knowledge statement rated below 2.50 should be included in the specifications and the committee can provide compelling and documented rationales, those knowledge statements may be reinstated for inclusion in the test specifications.)

The results of the survey administration indicated that 21 of the 149 knowledge statements (14%) failed to meet the 2.50 cut point for teachers and teacher educators in the primary group of respondents. Twelve of these 21 statements (43%) had a mean rating greater than 2.00 (*moderately important*). Twenty knowledge statements had failed to meet the 2.50 cut point for one or more subgroups of respondents. However, all of the knowledge statements "flagged" by the subgroup analysis were also rated below the 2.50 cut point by the primary respondent group.

The results of the job analysis study identified 128 knowledge statements judged to be important for newly licensed/certified physical education teachers by the diversity of educational professionals responding to the job analysis survey.

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A Job Analysis of the Knowledge Important for
Newly Licensed (Certified) Physical Education Teachers

Introduction

The subject assessments for The Praxis Series: Professional Assessments for Beginning Teachers ™ are designed to assess a prospective teacher's content knowledge of a specific subject area, general pedagogical knowledge, and subject-specific pedagogical knowledge. The series will be used by various states as part of their teacher licensure/certification process. Included as part of the subject assessments is a physical education assessment. This report will describe the job analysis conducted to identify the content domain and to support the content validity of this assessment. The goal was to identify the knowledge important for newly licensed (certified) physical education teachers.

The use of job analysis to define the content domain is a critical component in establishing the content validity of licensure and certification examinations. The *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1985) is a comprehensive technical guide that provides criteria for the evaluation of tests, testing practices, and the effects of test use. They state:

> The content domain to be covered by a licensure or certification test should be defined clearly and explained in terms of the importance of the content for competent performance in an occupation. Job analyses provide the primary basis for defining the content domain (p. 64).

Content validity is the principal validation strategy used for licensing and certification exams. It refers to the extent to which the domain covered by the examination overlaps with the important knowledge necessary to perform a given job competently. Demonstration of content validity is accomplished through the judgments of subject-matter experts. It is enhanced by the inclusion of large numbers of subject-matter experts who represent the diversity of the relevant areas of expertise (Ghiselli, Campbell, & Zedeck, 1981). The job analysis conducted for physical education was designed to be consistent with the *Standards* and current professional practices.

Method

The job analysis study described in this report involved a multimethod approach that included a literature review, subject-matter experts, and a national survey. In overview, groups of subject-matter experts first defined a knowledge domain important for newly licensed/certified physical education teachers. This knowledge domain was then sent out to educational professionals through a large-scale, national survey. The purpose of the survey administration was to: (1) obtain verification from large numbers of educational professionals that the subject-matter experts had defined a domain of knowledge important for physical education teachers and (2) identify a core of important knowledge relevant for all pertinent

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groups of newly licensed/certified physical education teachers. The use of a job analysis survey is an efficient and cost-effective method of obtaining input from large numbers of subject-matter experts and enables the importance ratings to be analyzed by relevant subgroups. Both of these facets of survey methodology contribute to the support of the content validity of the assessment.

The survey participants were physical education teachers, administrators, and college faculty whose names were obtained from the membership of the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD). An additional group of minority physical education teachers and teacher educators was obtained from the Ethnic Minority Council of the Association for Research, Administration, Professional Councils and Societies. The participants were asked to rate the knowledge in terms of *importance* for newly licensed/certified physical education teachers to perform their jobs in a competent manner. The specific steps in the job analysis process are described below.

Definition of the Knowledge Domain

Building an initial draft knowledge domain. The first step in the process of conducting the job analysis was to construct a preliminary knowledge domain. The domain was constructed by Educational Testing Service (ETS) Test Development staff with subject-matter expertise in physical education, and ETS Research staff with expertise in job analysis. In the process of developing the draft, the ETS subject-matter experts reviewed state licensure/certification requirements, current test specifications, current test items, relevant professional literature, and information provided by the National Association for Sport and Physical Education (NASPE). A group of five New Jersey and Pennsylvania teachers attended a one-day meeting at ETS to review and modify this initial draft. The next step involved mailing the revised draft to an external review panel, who were also asked to review the second draft of the domain. Their comments were obtained through telephone interviews. (Members of both panels are listed in Appendix A.) The value of these panels of experts was that independent subject-matter expertise was included early in the job analysis process. This contributed to the accumulation of evidence in support of the content validity of the physical education assessment.

Following the completion of the steps above, the resultant domain for physical education consisted of seven major knowledge areas partitioned into various subareas and 173 specific knowledge statements. The seven major knowledge areas were: (1) *Foundations*, (2) *Sciences*, (3) *Activities*, (4) *Health and Safety*, (5) *Organization*, (6) *Professional Responsibilities*, and (7) *Pedagogy Specific to Physical Education*.

Advisory/Test Development committee meeting. The draft domain was then mailed to members of an external Advisory/Test Development Committee. The members of this committee were teachers (one elementary, two middle, and one secondary school), four teacher educators, and a state administrator with expertise in physical education. This committee also had representation by race/ethnicity, sex, and geographic region (see Appendix A for list of members). The purpose of this committee was to review the draft domain in terms of its overall structure (i.e., do the major knowledge areas adequately define the important components of the

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knowledge domain), completeness, appropriateness of the knowledge statements, and clarity of wording. In addition, the members were asked to identify other knowledge areas that they believed should be added to the domain and to delete knowledge that they believed should not be included in the domain. The committee also reviewed and approved the rating scales for the national survey and the biographical data questions that would be asked of the survey participants. The biographical data were collected to describe the composition of the survey respondents and to permit analysis of the survey responses by various subgroups of respondents (e.g., males and females).

The revision process occurred during a two-day meeting held at Educational Testing Service. The meeting was led jointly by ETS Test Development and Research staff. (Prior to the meeting, the members of the committee were mailed a copy of the draft domain to review. They were informed about the purpose of the meeting and asked to come prepared to discuss their review of the draft domain.) During the course of the meeting, the domain was revised to reflect the consensus of the committee. Minor wording changes were made. Some knowledge statements were deleted and others were added.

The revised knowledge domain for physical education consisted of five major knowledge areas. The number of knowledge statements was reduced from 173 to 149. The five major knowledge areas were: (1) *Historical, Philosophical, and Sociological Foundations*, (2) *Scientific Foundations*, (3) *Concepts Relating to Motor Skills/Fitness/Sport*, (4) *Health and Safety*, and (5) *Pedagogy Specific to Physical Education*.

Large-Scale Survey

Survey instrument. The finalized survey (see Appendix B for a copy of the survey) consisted of three parts. Part I included the five major knowledge areas and 149 knowledge statements. Also for each major knowledge area in Part I there was a content coverage question. This question asked the survey participants to indicate, using a 5-point rating scale, how well each major knowledge area was covered by the specific knowledge statements. The participants also had an opportunity to identify knowledge that they believed should be added to the domain. The knowledge statements were judged using the importance rating scale described below:

> *How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?*
>
> *(0) Of no importance*
> *(1) Of little importance*
> *(2) Moderately important*
> *(3) Important*
> *(4) Very important*

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This scale is consistent with the *Standards* emphasis on identifying a content domain that is important for competent job performance. The scale was also reviewed and approved by the Advisory/Test Development Committee.

Part II of the survey asked the participants to indicate the weight (relative emphasis) that each of the major knowledge areas should receive on the assessment. This was accomplished by their distributing 100 total points across the major areas. These point distributions were easily converted into percentages, representing the percent of items that the survey respondents believed should be devoted to each area. This question was asked for an assessment covering all five areas and also for an assessment that excluded the category V -- Pedagogy Specific to Physical Education. (This was done to gain information on weighting of the remaining areas in the case where pedagogy is covered in a separate examination.)

Part III asked the survey participants for background information to be used to describe the respondents and to perform necessary subgroup analyses. These subgroup analyses will be described in the results section of this paper.

Pilot test. Prior to the large-scale administration, the survey was mailed to a small group (N=5) of physical education teachers and teacher educators. (See Appendix A for a list of participants.) These pilot-test participants were asked to review the survey for clarity of wording and instruction, ease of use, and comprehensiveness of content coverage. Their comments were obtained through telephone interviews. No significant revisions were suggested.

Survey participants. The job analysis survey, accompanied by a letter of invitation to participate (see Appendix C for a copy of the letter), was mailed to a primary group of 815 practicing professionals in physical education: (1) 510 physical education teachers (10 per state plus the District of Columbia), (2) 50 administrators (one per state), and (3) 255 college faculty (five per state plus the District of Columbia). These individuals were randomly selected from the membership of the American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD). This is the major professional organization of physical education teachers, administrators, and college faculty.

An analysis of the demographic information provided by the primary group of survey respondents indicated low minority representation (N=18, or 3.6%). Thus, a supplemental group of 410 minority teachers and teacher educators who were members of the Ethnic Minority Council of the Association for Research, Administration, Professional Councils and Societies was also included in the survey in order to increase the likelihood that a sufficient number of responses from minority teachers would be available to reflect their perspectives on the job of a newly licensed physical education teacher.

Survey administration. The surveys were sent to the primary group in November 1990 and to the supplementary group of minority teachers in May 1991. Each survey was accompanied by a letter of invitation to participate and a postage-paid envelope for return of

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the completed instrument. A reminder postcard was mailed approximately one week after each initial mailing.

Results

Data Analyses

Mean importance ratings were computed for each of the knowledge statements for teachers and teacher educators in the primary group of respondents. Due to the small number of administrators who responded to the survey (school administrators, n=7; state administrators, n=18), mean analyses were not conducted for these groups.

Analysis of mean importance ratings by subgroups of respondents from the primary and supplementary groups combined was also conducted. This analysis is used to identify a core of knowledge that all relevant subgroups agree is important for newly licensed/certified physical education teachers. Means were computed for only those relevant subgroup categories that had at least 30 respondents. This minimum number is necessary to ensure an accurate estimate of the population mean (Walpole, 1974). The subgroup agreement is necessary to ensure that the content of the assessment is relevant to a wide range of candidates. This represents an absolute measure of agreement because it is based on the magnitude of the mean ratings. Correlation coefficients of the profile of mean importance ratings were also computed for the relevant subgroups of respondents. This analysis provides information about the extent to which the subgroups agree on the relative importance of the knowledge. It determines the similarity in the pattern of the mean ratings. Similar patterns indicate that there is agreement in the ratings of relative importance. Results that support both absolute and relative subgroup agreement provide substantial evidence in support of content validity.

Criterion for Interpretation of Mean Importance Ratings

Since one of the goals of establishing content validity is to ensure that only the more important knowledge statements are included in the development of assessment specifications, a criterion (cutpoint) for inclusion needs to be established. A reasonable criterion that has been used in a similar job analysis study (cf. Rosenfeld & Tannenbaum, 1991) is a mean importance rating that represents the midpoint between *moderately important* and *important*. For the importance rating scale used in the present job analysis, the value of this criterion is 2.50. It is believed that this criterion is consistent with the intent of content validity, which is to include important knowledge in the assessment measure and to exclude unimportant knowledge from the assessment measure. Therefore, knowledge statements that receive a mean importance rating of 2.50 or higher are eligible for inclusion in the development of assessment specifications; knowledge statements that receive a mean rating of less than 2.50 may not be considered for possible inclusion. (Because survey participants were not involved in the development of the knowledge domain, they may lack certain insights that the Advisory/Test Development Committee members have due to their high level of involvement in the definition of the domain. As a consequence, if the Committee believes that a knowledge statement rated

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below 2.50 should be included in the specifications and the Committee can provide compelling and documented rationales, those knowledge statements may be reinstated for inclusion in the assessment specifications.)

Survey Respondents: Primary Group

Response rate. Of the 815 surveys mailed, nine were returned due to an invalid mailing address. Thus, 806 surveys were actually administered. Of these 806, 496 were returned. This represents a response rate of 61.5%. For mail surveys of this type, a 61.5% response rate is considered good.

Demographic characteristics. Sixty-five percent of the respondents were between the ages of 35 years and 54 years. Thirty-eight percent were males, and 60% were females. The majority of respondents (91%) were White. Over half (71%) had 11 or more years of teaching experience in physical education. Twenty-one percent were currently teaching at the elementary school level; 11% were teaching at the middle school level; 18% were teaching at the secondary school level; and 33% were teacher educators. A complete breakdown of the demographic characteristics of the respondents is provided in Appendix D.

Survey Respondents: Supplementary Group

Response Rate. Of the 410 surveys mailed, 20 (5%) were returned due to an invalid mailing address. Thus, 390 surveys were actually sent to minority teachers and teacher educators. Of these 390, 48 were returned. This represents a response rate of 12.3%.

Demographic characteristics. Seventy-two percent of the minority respondents were between the ages of 35 years and 54 years. Forty-four percent were males, and 56% were females. Of the 48 surveys returned, five were from White respondents and were excluded from any further analyses. The remainder of the respondents were Black. Sixty-one percent were teacher educators and approximately 33% were individuals currently teaching at the middle or secondary school levels. Approximately 86% of the respondents had 16 or more years of teaching experience in physical education. A complete breakdown of the demographic characteristics of the supplementary group of respondents is provided in Appendix D.

Mean Importance Ratings of the Five Knowledge Areas

Respondents were asked to give an overall rating of importance for each of the five knowledge areas. The means for each respondent group are presented in Table 1. The areas of Health and Safety and Pedagogy Specific to Physical Education received the highest mean importance ratings by each group, while Historical, Philosophical, and Sociological Foundations received the lowest overall importance ratings.

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Table 1
Mean Importance Ratings of the Five Knowledge Areas

MAJOR KNOWLEDGE AREA	PRIMARY		SUPPLEMENTARY
	TEACHERS	TEACHER EDUCATORS	BLACK EDUCATORS
	MEAN	MEAN	MEAN
Historical, Philosophical, and Sociological Foundations	2.62	2.86	3.26*
Scientific Foundations	3.37	3.58	3.52
Concepts Relating to Motor Skills/Fitness/Sport	3.49	3.49	3.41
Health and Safety	3.70	3.62	3.71
Pedagogy Specific to Physical Education	3.53	3.72	3.55

*Note that this mean reflects a fairly small N which included a high percentage of college professors.

Mean Importance Ratings of Knowledge Statements

The mean importance rating and standard deviation for each of the knowledge statements is provided in Appendix E. The means are presented for teachers (n = 268) and teacher educators (n = 158) in the primary respondent group. (Only seven surveys were returned from school administrators and 18 from state administrators; thus, analyses were not conducted on these groups.) As previously discussed, knowledge statements that received a mean importance rating of less than 2.50 (midpoint between *moderately important* and *important*) may not be considered for inclusion in the development of assessment specifications, unless a compelling and documented rationale is provided by the committee for its reinstatement. Those knowledge statements rated less than 2.50 by either the teachers or teacher educators in the primary group of respondents are presented in Table 2. Of the 149 individual knowledge statements, 21 (14%) were rated below 2.50 by at least one of these two groups. Twelve of these 21 statements (43%) had a mean rating greater than 2.00 (*moderately important*). Of the 21 statements that were below the cut point, nine are in the area of Historical, Philosophical, and Sociological Foundations, and 12 are in the area of Concepts Relating to Motor Skills/Fitness/Sport. All statements in the Scientific Foundations, Health and Safety, and Pedagogy Specific to Physical Education areas were above the cut point.

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Table 2
Mean Importance Ratings of Knowledge Statements Rated Less Than 2.50: Primary Respondent Group

	PRIMARY		SUPPLEMENTARY
KNOWLEDGE STATEMENT	TEACHERS	TEACHER	BLACK
I. Historical, Philosophical, and Sociological Foundations			
A. Historical Foundations			
1. Competition	2.05	2.37	
2. Universality of play	2.44		
3. Nationalism	2.11	2.04	
4. Preparation for war	1.49	1.58	2.07
6. Comparative physical education & sports	2.24	2.43	
7. Leading philosophers & major issues in history of phys. ed.	2.27		
C. Sociological/Sociopolitical Issues			
13. Political factors	1.80	2.16	2.49
14. Economic factors	2.21	2.36	
16. Religious factors	1.79	1.87	
III. Concepts Relating to Motor Skills/Fitness/Sport			
B. Dance & Rhythmic Activities			
65. History	2.00	1.86	
67. Characteristics of accompaniment	2.25	2.03	
68. Choreography	2.23	1.94	
69. Dance forms	2.40	2.45	
E. Individual/Dual/Team Sports			
83. History	2.19	1.96	
88. Archery		2.35	
91. Diving	1.89	1.65	
92. Fencing	1.81	1.59	2.42
93. Field hockey	2.46	2.25	
96. Lacrosse	2.19	1.90	2.40
104. Wrestling	2.20	2.06	
Gymnastics			
106. Apparatus work		2.30	

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Correlations of the Profiles of Mean Importance Ratings

The profiles of mean importance ratings for teachers and teacher educators from the primary group and the total supplementary group were correlated. The coefficients are presented in Table 3. All values exceeded .90, indicating that there is a high level of agreement among the three groups of professionals.

Table 3
Correlations of the Profiles of Mean Importance Ratings

RESPONDENT GROUPS	Teachers	Teacher Educators	Supplementary Group: Black Educators
Teachers (Primary Group)	–		
Teacher Educators (Primary Group)	.94	–	
Supplementary Group: Black Educators	.91	.94	–

Subgroup Analyses

Mean importance ratings. It is important that the content of the physical education assessment be verified by a diversity of physical education professionals. Therefore, mean importance ratings for each knowledge statement were computed for the following subgroups of respondents within the primary and supplementary respondent groups combined: (1) race/ethnicity (minority, White); (2) sex; (3) teaching experience [1] ($\leq$ 5 years, > 5 years); (4) geographic region (Northeast, Central, South, Far West). The means are presented in Appendix F. An analysis of importance ratings by geographic region is consistent with recent legal emphasis on addressing regional job variability when conducting job analysis for content domain specification purposes (Kuehn et al., 1990). The four geographic regions included for analysis are consistent with the categorization established by the National Association of State Directors of Teacher Education and Certification (NASDTEC). Sex and race/ethnicity subgroups were included because they represent protected "classes" under Title VII of the Civil Rights Act of 1964. (Race/ethnicity was dichotomized into White and minority respondents because of the small numbers of respondents representative of different races/ethnicities. The dichotomous breakdown of teaching experience at the 5-year point was chosen so that the judgments of less experienced and more experienced teachers will be represented.)

The results of the subgroup analysis are presented in Table 4. Twenty knowledge statements were rated below the 2.50 cut point by one or more of the subgroups. The results did not uncover any additional knowledge statements (i.e., beyond the 21 statements previously identified by the mean analysis conducted on teachers and teacher educators in the primary group) judged to be below the 2.50 cut point.

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Table 4
Mean Importance Ratings of Knowledge Statements Rated Less Than 2.50 by Subgroups of Respondents: Primary and Supplementary Groups Combined

	ETHNICITY		SEX		EXPERIENCE		GEOGRAPHIC REGION			
TASK STATEMENT	M	W	F	M	≤5	>5	NE	C	S	FW
I. Historical, Philosophical, and Sociological Foundations										
A. Historical Foundations										
1. Competition		2.15	2.14	2.34	2.15	2.06	2.27	2.04	2.28	2.27
3. Nationalism		2.06	2.05	2.25	2.24	2.10	2.32	1.89	2.23	2.07
4. Preparation for war	2.11	1.50	1.57	1.62	1.47	1.51	1.56	1.39	1.78	1.58
6. Comparative physical education & sports		2.29	2.26		2.24	2.25	2.49	2.11		2.33
7. Leading philosophers & major issues in history of phys. ed.		2.46			2.21	2.31		2.29		
C. Sociological/Sociopolitical Issues										
13. Political factors	2.33	1.94	1.94	2.09	1.92	1.81	2.04	1.85	2.01	2.10
14. Economic factors		2.27	2.27	2.42	2.14	2.24	2.40	2.21	2.36	2.34
16. Religious factors	2.16	1.81	1.87	1.86	1.67	1.84	1.76	1.78	1.99	1.87
III. Concepts Relating to Motor Skills/Fitness/Sport										
B. Dance & Rhythmic Activities										
65. History		1.92	2.09	1.92	2.00	2.05	2.12	1.92	2.09	1.97
67. Characteristics of accompaniment		2.17	2.32	2.16	2.41	2.28	2.35	2.09	2.34	2.22
68. Choreography		2.12	2.30	2.00	2.48	2.24	2.37	2.04	2.22	2.12
69. Dance forms		2.43		2.32		2.41		2.33		
E. Individual/Dual/Team Sports										
83. History		2.07	2.21	2.17	2.15	2.25	2.31	1.91	2.42	2.07
88. Archery		2.46		2.47	2.49			2.39		2.44
91. Diving	2.37	1.81	1.84	1.95	1.89	1.94	1.91	1.85	2.03	1.73
92. Fencing	2.20	1.75	1.81	1.83	1.97	1.82	1.86	1.66	1.93	1.75
93. Field hockey		2.38	2.48	2.29		2.43		2.10	2.39	2.43
96. Lacrosse	2.24	2.08	2.13	2.07	2.28	2.19		1.80	2.15	1.87

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Table 4 (cont.)

TASK STATEMENT	ETHNICITY		SEX		EXPERIENCE		GEOGRAPHIC REGION			
	M	W	F	M	≤5	>5	NE	C	S	FW
104. Wrestling	2.42	2.16	2.14	2.27	2.25	2.22	2.33	1.99	2.28	2.17
Gymnastics										
108. Apparatus work		2.43	2.48	2.43				2.31	2.47	2.34

Correlations of the profiles of mean importance ratings. Correlation coefficients were computed for the profiles of mean importance ratings for the subgroups within the primary and supplementary groups combined. The coefficients are presented in Table 5. All values exceeded .90, indicating a very high level of agreement between the subgroups of respondents. Together, the outcomes of the mean and correlational analyses provide strong support for a core of important knowledge that is judged to be important by a diversity of physical education professionals.

Table 5
Correlations of the Profiles of Mean Importance Ratings by Subgroup: Primary and Supplementary Groups Combined

	1	2	3	4	5
TEACHING EXPERIENCE (years) [2]					
1. ≤5	–				
2. >5	.97	–			
RACE/ETHNICITY					
1. Minority	–				
2. White	.95	–			
SEX					
1. Female	–				
2. Male	.98	–			
GEOGRAPHIC REGION					
1. Northeast	–				
2. Central	.97	–			
3. South	.97	.99	–		
3. Far West	.97	.99	.98	–	

[2] Includes only teacher respondents

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Table 4 (cont.)

TASK STATEMENT	ETHNICITY		SEX		EXPERIENCE		GEOGRAPHIC REGION			
	M	W	F	M	≤5	>5	NE	C	S	FW
104. Wrestling	2.42	2.16	2.14	2.27	2.25	2.22	2.33	1.99	2.28	2.17
Gymnastics										
108. Apparatus work		2.43	2.48	2.43				2.31	2.47	2.34

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Table 5
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	1	2	3	4	5
TEACHING EXPERIENCE (years) [2]					
1. ≤5	–				
2. >5	.97	–			
RACE/ETHNICITY					
1. Minority	–				
2. White	.95	–			
SEX					
1. Female	–				
2. Male	.98	–			
GEOGRAPHIC REGION					
1. Northeast	–				
2. Central	.97	–			
3. South	.97	.99	–		
3. Far West	.97	.99	.98	–	

[2] Includes only teacher respondents

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Content Coverage

To determine the adequacy of the survey's content domain coverage, respondents were asked to judge how well the survey covered each major knowledge area. These judgments were obtained using a 5-point rating scale that ranged from a low of 1 (*very poorly*) to a high of 5 (*very well*). The mean ratings for each area are presented in Table 6. All the mean ratings were close to or exceeded 4.00. This indicates that all the major knowledge areas were judged to have been well covered.

Table 6
Mean Ratings of Content Coverage

MAJOR KNOWLEDGE AREAS	PRIMARY		SUPPLEMENTARY
	TEACHERS	TEACHER EDUCATORS	BLACK EDUCATORS
	MEAN	MEAN	MEAN
Historical, Philosophical, and Sociological Foundations	3.84	3.81	4.17
Scientific Foundations	4.24	4.29	4.36
Concepts Relating to Motor Skills/Fitness/Sport	4.30	4.15	4.39
Health and Safety	4.23	4.08	4.57
Pedagogy Specific to Physical Education	4.37	4.39	3.55

Recommendations for Test Content

The survey participants were asked to indicate the weight (relative emphasis) that each of the major knowledge areas should receive on the assessment. This was accomplished by their distributing 100 total points across the major areas. These recommendations are to be considered by the Advisory/Test Development Committee when setting final test specifications. The means of these ratings are presented in Table 7 for each of the respondent groups. Survey participants were also asked to recommend the amount of emphasis that each of the major knowledge areas should receive excluding Pedagogy. The means of these ratings are presented in Table 8. Respondent groups gave the highest emphasis to Concepts Relating to Motor Skills/Fitness/Sport and Pedagogy Specific to Physical Education in the first weighting task. On the second weighting task, Concepts Relating to Motor Skills/Fitness/Sport received the highest mean rating. The lowest emphasis was given to the area of Historical, Philosophical, and Sociological Foundations in both weighting exercises.

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Table 7
Mean Percentage Weights (Including Pedagogy)

MAJOR KNOWLEDGE AREAS	PRIMARY		SUPPLEMENTARY
	TEACHERS	TEACHER EDUCATORS	BLACK EDUCATORS
	MEAN	MEAN	MEAN
Historical, Philosophical, and Sociological Foundations	9.66	10.93	12.86
Scientific Foundations	20.90	22.48	17.65
Concepts Relating to Motor Skills/Fitness/Sport	28.20	25.22	25.38
Health and Safety	19.67	14.39	20.58
Pedagogy Specific to Physical Education	21.38	26.41	23.44

Table 8
Mean Percentage Weights (Excluding Pedagogy)

MAJOR KNOWLEDGE AREAS	PRIMARY		SUPPLEMENTARY
	TEACHERS	TEACHER EDUCATORS	BLACK EDUCATORS
	MEAN	MEAN	MEAN
Historical, Philosophical, and Sociological Foundations	13.05	15.25	18.09
Scientific Foundations	26.38	30.15	24.58
Concepts Relating to Motor Skills/Fitness/Sport	35.52	34.31	33.07
Health and Safety	25.01	19.14	24.49

Summary

A job analysis was conducted to define a knowledge domain important for newly licensed/certified physical education teachers to perform their jobs in a competent manner. The results of the job analysis will be used to develop specifications for the physical education assessment that will be included as part of the subject assessments of The Praxis Series: Professional Assessments for Beginning Teachers ™.

An initial draft domain of important knowledge was constructed by ETS Test Development staff with expertise in physical education and ETS Research staff with expertise in

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job analysis. This draft domain was then reviewed, modified, and approved by an external Advisory/Test Development Committee. The revised knowledge domain was then subjected to verification through the use of a large-scale, national survey of physical education teachers, administrators, and college faculty. The survey participants were asked to rate the specific knowledge statements of the domain using a 5-point importance scale. A cut point of 2.50 (midpoint between *moderately important* and *important*) was established to differentiate between important and unimportant knowledge statements. Knowledge statements that received a mean importance rating of 2.50 or higher were considered important and, therefore, eligible for inclusion in the development of assessment specifications; knowledge statements that received a mean rating of less than 2.50 were considered unimportant and, therefore, not eligible. (However, because survey participants were not involved in the development of the knowledge domain and, consequently, may lack certain insights that the Advisory/Test Development Committee members have due to their high level of involvement in the definition of the domain, a knowledge statement rated below 2.50 could be reinstated for inclusion, if accompanied by compelling and documented rationales provided by the committee.)

Twenty-one knowledge statements were rated less than 2.50 by teachers and teacher educators from the primary group of survey respondents. This represents approximately 14% of the knowledge domain. Twelve of these 21 statements (43%) had a mean rating greater than 2.00 (*moderately important*). The subgroup analysis revealed twenty knowledge statements rated above the 2.50 criterion. These twenty statements were also rated below 2.50 by the teachers and teacher educators in the primary respondent group.

The computation of correlation coefficients to assess subgroup agreement in terms of perceived relative importance of the knowledge statements, revealed a very high level of agreement. The coefficients generated by the subgroup analyses all exceeded .90. This finding, coupled with the outcomes of the mean analysis indicate that there is substantial agreement in the importance ratings across the diversity of physical education professionals.

In summary, the results of the study identified 128 knowledge statements judged to be important for newly licensed/certified physical education teachers by the diversity of educational professionals responding to the job analysis survey.

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Appendix A

Subject-Matter Experts

Local Committee

Jim Dragonetti
Toms River High School South
Hyers St.
Toms River, NJ 08753

Jeanne Moon
Hatboro-Horsham Senior H.S.
Horsham, PA 19044

Barbara Skiba
Hopewell Valley Regional H.S.
Pennington-Titusville Rd.
Pennington, NJ 08534

Rick Stephenson
Upper Darby Senior H.S.
Lansdowne Ave. & School Lane
Upper Darby, PA 19082

Ricky Swalm
Ursinus College
802 Ridley Creek Dr.
Media, PA 19063

External Review Panel

William Blair
New Mexico State Dept. of Educ.
Education Building
300 Don Gaspar
Santa Fe, NM 87501-2786

Dr. Marian Frank
Teacher/Student Activities
Coordinator
J.P. McCaskey High School
P.O. Box 150
Lancaster, PA 17602

Melba Irvin
Fresno State University
1249 East San Jose
Fresno, CA 93710

Susan Kogut

Amelia Lee

Michael Marcus

Regina McGill
Bettendorf Middle School
2030 Middle Road
Bettendorf, IA 52722

Robert J. Ritson
Physical Educ. Coordinator
Oregon Dept. of Educ.
700 Pringle Pkwy. SE
Salem, OR 97310

Margaret J. Safrit
Henry-Bascom Professor
University of Wisconsin
2000 Observatory Drive
Madison, WI 53706

Marvin W. Scott
Assistant Professor
Department of Kinesiology
University of Maryland at
College Park
College Park, MD 21045

Advisory/Test Development Committee Members

Elementary School Teachers

Marsha M. Baretta
Orchard Hill Elementary School
350 Foster St.
South Windsor, CT 06074

Cynthia L. Meyer
Onoway Elementary School
3115 Woodbury Rd.
Shaker Heights, OH 44120

Middle School Teachers

Bertram Bowman
Jefferson Middle School
Saratoga Avenue
Rochester, NY 14621

Tom Matheson
Chaparral Middle School
280 Poindexter Rd.
Moorpark U.S.D.
Moorpark, CA 93021

Secondary School Teacher

Elisabeth Rauschenberger
Las Cruces High School
301 W. Amador St.
Las Cruces, NM 88001

Teacher Educators

Melvin T. Evans
Chair, Dept. of HPER
Jackson State University
1400 J.R. Lynch St.
Jackson, MS 39217

Harold Z. Holmes
Dept. of Physical Education
202 Weaver Health Bldg.
Eastern Kentucky University
Richmond, KY 40475-3134

Judith E. Rink
Chair, Physical Educ. Dept.
Blatt Physical Educ. Center
University of South Carolina
Columbia, SC 29208

Advisory/Test Development Committee Members (continued)

State Administrator

Del L. Moser
Dept. of Health, Phys.Ed. and
Driver Education
Virginia State Dept. of Education
P.O. Box 6Q
Richmond, VA 23216-2060

Pilot Participants

Dr. Beverly Johnson
Health & Physical Education Dept.
Old Dominion University
P.O. Box 6173
Norfolk, VA 23508

Constance Kapral
Hopewell School
1068 Chestnut Hill Road
Glastonbury, CT 06033

Pam Milchrist
Cal State Univ. at Sacramento
680 40th Street
Sacramento, CA 95819

Dr. Frank Pettigrew
School of Physical Education,
Recreation, and Dance
263-A Memorial Annex
Kent State University
Kent, OH 44242

Pita Thomas
1811 View Court
Las Cruces, NM 88001

Appendix B

Job Analysis Survey

JOB ANALYSIS INVENTORY

FOR TEACHERS OF

PHYSICAL EDUCATION

By

Educational Testing Service
Princeton, New Jersey

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INTRODUCTION

Educational Testing Service (ETS) is developing a new generation of assessments for the purpose of licensing (certifying) teachers. The inventory that follows is part of our development effort and is designed to gather information concerning the entry-level physical education teacher's job. It was developed by classroom teachers, college faculty, and state department of education officials, along with ETS staff.

Those who constructed this inventory recognize that physical education teachers are required to teach students with varying backgrounds and levels of ability. For these reasons, the collaborators believe that teachers should have a broad and deep understanding of physical education in order to teach it. The inventory asks you to respond to a list of knowledge and ability statements and to rate each statement as to its importance for a newly-licensed (certified) physical education teacher. Please do not relate each statement to your own job but rather to what you believe an entry-level physical education teacher should know and be able to do.

The information you provide will guide the development of the new NTE physical education examination. It is expected that the new examination will differ from the current examination in both content and design. In addition to the development of a new examination, this study will also contribute to our understanding of physical education as a profession. We expect the results of the study to be widely disseminated and to have ramifications for teacher preparation.

The inventory has been mailed to a sample of 800 professionals. Its value is directly related to the number of individuals who return their completed inventories. Because you represent a large number of professionals, your responses are extremely important. Please take the time to complete and return the inventory.

PART I - KNOWLEDGE AND ABILITIES FOR PHYSICAL EDUCATION TEACHERS

The purpose of this inventory is to determine what you believe newly licensed (certified) physical education teachers should know and be able to do in order to perform their job in a competent manner. On the following pages you will find five major content areas and beneath each, a list of knowledge and ability statements that define the particular content area. The order of presentation of the five content areas is not meaningful.

The five content areas are:

I. Historical, Philosophical and Sociological Foundations
II. Scientific Foundations
III. Concepts Relating to Motor Skills/Fitness/Sport
IV. Health and Safety
V. Pedagogy Specific to Physical Education

For each statement within each of these content areas, you will be asked to make the following judgment:

> How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?
>
> Circle your response using the 5-point scale adjacent to each statement.
>
> (0) Of no importance
> (1) Of little importance
> (2) Moderately important
> (3) Important
> (4) Very important

To familiarize yourself with the content areas and statements, you may wish to briefly glance through the inventory before making your judgments.

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

I. HISTORICAL, PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS

IMPORTANCE

A. Historical Foundations

Historical development of physical education and sport in various cultures (e.g., Greek and other European, African, Asian, Native American)

1. Competition 0 1 2 3 4
2. Universality of play 0 1 2 3 4
3. Nationalism (e.g., identification of particular nations with specific sports) 0 1 2 3 4
4. Preparation for war 0 1 2 3 4
5. Health/fitness 0 1 2 3 4
6. Comparative physical education and sport (e.g., variations in the prevalence and emphasis of professional sports and physical education programs in different historical periods) 0 1 2 3 4
7. Leading philosophers and major issues in the history of physical education 0 1 2 3 4

B. Current philosophical issues in physical education

8. Purpose of Physical Education (e.g., fitness, motor skills, recreation) 0 1 2 3 4
9. Relationship between teaching and coaching 0 1 2 3 4
10. Accountability 0 1 2 3 4
11. Roles, benefits and effects of competition 0 1 2 3 4

C. Sociological/Sociopolitical Issues

Cultural considerations

12. Multi-cultural factors 0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, **regardless** of the grade level they will be teaching, if they are to perform their jobs in a **competent manner**?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

I. **HISTORICAL, PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS (cont.)**

		IMPORTANCE
13.	Politics factors	0 1 2 3 4
14.	Economic factors	0 1 2 3 4
15.	Educational factors	0 1 2 3 4
16.	Religious factors	0 1 2 3 4
	Equity considerations	
17.	PL 94-142	0 1 2 3 4
18.	Title IX	0 1 2 3 4
19.	The women's movement	0 1 2 3 4
20.	Affirmative action	0 1 2 3 4
21.	**Overall evaluation of the importance of Historical, Philosophical and Sociological Foundations**	0 1 2 3 4

22. How well do the statements in section I cover the important aspects of Historical, Philosophical and Sociological Foundations?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

II. SCIENTIFIC FOUNDATIONS	IMPORTANCE
A. Psychological	
Personality/participation relationships	
23. Self-esteem	0 1 2 3 4
24. Body image	0 1 2 3 4
25. Motivation	0 1 2 3 4
26. Coping ability or skills	0 1 2 3 4
27. Stress and anxiety	0 1 2 3 4
28. Aggressiveness	0 1 2 3 4
29. Self discipline	0 1 2 3 4
Social psychological/participation relationships	
30. Role modeling by persons of influence	0 1 2 3 4
31. Reinforcement	0 1 2 3 4
32. Peer pressure	0 1 2 3 4
33. Group cohesion	0 1 2 3 4
34. Family dysfunction (e.g., death in the family, divorce)	0 1 2 3 4
Cooperation	
35. Mutual support	0 1 2 3 4
36. Appreciation	0 1 2 3 4
37. Competition	0 1 2 3 4
38. Leadership	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

II. SCIENTIFIC FOUNDATIONS (cont.)	IMPORTANCE
B. Biological	
Human anatomy and physiology	
39. Identification of functions of major muscles and bones	0 1 2 3 4
40. Identification of major systems of the body and their functions (e.g., cardiovascular, respiratory, digestive, nervous)	0 1 2 3 4
Physiology of exercise	
41. Terminology of exercise physiology (e.g., oxygen uptake, oxygen consumption, lactic acid buildup)	0 1 2 3 4
42. Components of fitness (e.g., cardiovascular, muscular)	0 1 2 3 4
43. Principles of exercise (e.g., isotonic, overload, aerobic)	0 1 2 3 4
44. Roles of cardiovascular, respiratory, muscular, and nervous systems in exercise	0 1 2 3 4
45. Short and long term effects of physical training	0 1 2 3 4
46. Relationship of nutrition to fitness	0 1 2 3 4
C. Growth and Motor Development	
47. The role perception plays in motor development (e.g., spatial movement relationships)	0 1 2 3 4
48. Neurophysiology of motor control	0 1 2 3 4
49. The effects of maturation and experience on motor patterns	0 1 2 3 4
50. Biological and environmental influences on gender differences in motor performances	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

II. SCIENTIFIC FOUNDATIONS (cont.)	IMPORTANCE
D. Biomechanics	
51. Terminology of Biomechanics (e.g., mass, force, friction)	0 1 2 3 4
52. Basic principles of movement (e.g., summation of forces, center of gravity, force/speed relationships, torque)	0 1 2 3 4
53. Application of basic principles of movement to sports skills	0 1 2 3 4
54. Methods of analyzing movement (e.g., cinematographic/noncinematographic)	0 1 2 3 4
55. Analysis of basic movement patterns (e.g., overhand throw, underhand throw, kick)	0 1 2 3 4
E. Motor Learning	
56. Classical and current theories of motor learning (e.g., closed loop systems, schema, motor control)	0 1 2 3 4
57. Variables which affect learning and performance (e.g., feedback, knowledge of results, mental practice)	0 1 2 3 4
58. Effects of individual differences on learning/performance (e.g., perception, attention, retention)	0 1 2 3 4
59. **Overall evaluation of the importance of Scientific Foundations**	0 1 2 3 4

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How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

II. SCIENTIFIC FOUNDATIONS (cont.)

60. How well do the statements in section II cover the important aspects of Scientific Foundations?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT — IMPORTANCE

A. Fundamental Skills

61. Locomotor 0 1 2 3 4
62. Nonlocomotor 0 1 2 3 4
63. Manipulative 0 1 2 3 4
64. Falling, and landing skills 0 1 2 3 4

B. Dance and Rhythmic Activities

65. History 0 1 2 3 4
66. Skill analysis 0 1 2 3 4
67. Characteristics of accompaniment 0 1 2 3 4
68. Choreography 0 1 2 3 4
69. Dance forms 0 1 2 3 4
70. Analysis of body, space, effort, relationship (e.g., Laban analysis) 0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT (cont.)	IMPORTANCE
C. Fitness	
71. Components (cardiovascular endurance, muscular strength/ endurance, flexibility, body composition)	0 1 2 3 4
Conditioning practices and principals (frequency, intensity, time or duration, role of exercise)	
72. Aerobic or cardiorespiratory	0 1 2 3 4
73. Resistance training	0 1 2 3 4
74. Flexibility training	0 1 2 3 4
Safety and injury prevention considerations	
75. Warmup and cool down	0 1 2 3 4
76. Knowledge of harmful exercises	0 1 2 3 4
77. Environmental conditions	0 1 2 3 4
D. Games	
78. Cooperative	0 1 2 3 4
79. Competitive	0 1 2 3 4
80. Skill Analysis	0 1 2 3 4
81. Rules/Strategies	0 1 2 3 4
82. Game forms (e.g., invasion, chasing)	0 1 2 3 4
E. Individual/Dual/Team Sports	
83. History	0 1 2 3 4
84. Facilities and equipment	0 1 2 3 4
85. Skill Analysis	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT (cont.)	IMPORTANCE
86. Safety and injury prevention	0 1 2 3 4
87. Rules/strategies	0 1 2 3 4
List of Sports	
88. Archery	0 1 2 3 4
89. Badminton	0 1 2 3 4
90. Basketball	0 1 2 3 4
91. Diving	0 1 2 3 4
92. Fencing	0 1 2 3 4
93. Field hockey	0 1 2 3 4
94. Football	0 1 2 3 4
95. Golf	0 1 2 3 4
96. Lacrosse	0 1 2 3 4
97. Racquetball	0 1 2 3 4
98. Soccer	0 1 2 3 4
99. Softball	0 1 2 3 4
100. Swimming	0 1 2 3 4
101. Tennis	0 1 2 3 4
102. Track and field	0 1 2 3 4
103. Volleyball	0 1 2 3 4
104. Wrestling	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, **regardless** of the grade level they will be teaching, if they are to perform their jobs in a **competent manner**?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT (cont.)	IMPORTANCE
105. Lifetime activities and recreational pursuits (bowling, table tennis, horseshoes, camping, etc.)	0 1 2 3 4
106. Adventure and outdoor pursuits (e.g., kayaking, orienteering, rock climbing, self defense and martial arts)	0 1 2 3 4
Gymnastics	
107. Stunts and tumbling	0 1 2 3 4
108. Apparatus work	0 1 2 3 4
109. Educational (movement themes)	0 1 2 3 4
110. **Overall evaluation of the importance of Concepts Relating to Motor Skills/Fitness/Sport**	0 1 2 3 4

111. How well do the statements in section III cover the important aspects of Concepts Relating to Motor Skills/Fitness/Sport?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

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How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, **regardless** of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

IV. HEALTH AND SAFETY	IMPORTANCE
A. Health Appraisals and Referrals	
112. Health related fitness appraisals	0 1 2 3 4
113. Personal goal setting and assessment (e.g., Physical Best, President's Challenge, Fitnessgram)	0 1 2 3 4
114. Considerations related to P.L. 94-142	0 1 2 3 4
B. Handling Accidents and Illnesses	
115. First Aid	0 1 2 3 4
116. CPR	0 1 2 3 4
117. Lifesaving/water safety	0 1 2 3 4
118. Certification	0 1 2 3 4
C. Liability and Legal Aspects	
119. Equipment	0 1 2 3 4
120. Class organization/supervision	0 1 2 3 4
121. Program selection	0 1 2 3 4
122. Effects of substance abuse on performance and behavior	0 1 2 3 4
123. **Overall evaluation of the importance of Health and Safety**	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

IV. HEALTH AND SAFETY (cont.)

124. How well do the statements in section IV cover the important aspects of Health and Safety?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

_____

_____

V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION — IMPORTANCE

In addition to content, Physical Education teachers also need to know something about pedagogy specific to Physical Education. This includes knowledge of curriculum, resources, and instructional and evaluation strategies appropriate for a particular group of students (e.g., students of different age levels, students with special needs)

A. K-12 Program Development

125. Goals and aims for teaching Physical Education in the K-12 curriculum (e.g., tangible outcomes/achievements, equity/quality, participation, improve quality of life, opportunity for self-expression and self-realization, development of sense of cooperation and competition) 0 1 2 3 4

Program considerations

126. Coeducational 0 1 2 3 4

127. Extracurricular 0 1 2 3 4

128. Adaptive 0 1 2 3 4

129. Intramural 0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION (cont.)	IMPORTANCE
130. Community-based	0 1 2 3 4
131. Required/selective/elective classes	0 1 2 3 4
132. How to develop K-12 curriculum	0 1 2 3 4
133. How to implement K-12 curriculum (effective use of personnel, budgets, schedules, facilities, equipment and materials)	0 1 2 3 4
134. How to evaluate K-12 curriculum	0 1 2 3 4
B. Classroom Program Development	
135. Rationale for the choice of a particular curricular model (e.g., traditional multi-activity program, concept-based model, social-development model)	0 1 2 3 4
136. Relationships among content areas in Physical Education	0 1 2 3 4
137. Relationships between Physical Education and other subject matter areas	0 1 2 3 4
138. Justification for the scope and sequence of content for a particular group of students	0 1 2 3 4
139. How to prepare, evaluate, and justify lesson and unit plans for a particular group of students	0 1 2 3 4
How to select, evaluate and use:	
140. Curricular materials and resources (e.g., textbooks and other printed materials, computer software, studio materials)	0 1 2 3 4
141. Community resources	0 1 2 3 4
142. Instructional media and hardware (e.g., film, television, video)	0 1 2 3 4
143. Equipment and facilities	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, regardless of the grade level they will be teaching, if they are to perform their jobs in a **competent manner?**

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION (cont.)	IMPORTANCE
C. Instruction	
144. Critical characteristics that influence how a student learns a particular content area in physical education	0 1 2 3 4
145. Prerequisite knowledge, experience, and skills, that students need for various topics in Physical Education	0 1 2 3 4
146. Ways of presenting/demonstrating/explaining content in Physical Education (e.g., teaching cues, performance, analogies, explanations) that make it understandable and interesting to particular groups of students	0 1 2 3 4
147. Instructional strategies and activities as related to specific objectives (e.g., direct instruction, Mosston's teaching styles, supervised practice, group work, lecture, individualized practice, interactive teaching) in Physical Education appropriate for particular groups of students and particular topics	0 1 2 3 4
148. Strategies for motivating and encouraging students to succeed in Physical Education	0 1 2 3 4
149. Classroom management techniques for physical education (e.g., organization of people and equipment, space, and time)	0 1 2 3 4
D. Assessment	
150. Evaluation strategies (e.g., student needs assessment, fitness tests, observations, oral discussions, written tests, skills test) used to assess student needs, readiness, and performance in Physical Education	0 1 2 3 4
151. Problems in a student's performance and knowledge which arise from misconceptions about content in Physical Education	0 1 2 3 4
152. Values and purposes of evaluation	0 1 2 3 4

How **important** is this knowledge or ability for all **newly licensed (certified)** physical education teachers, **regardless** of the grade level they will be teaching, if they are to perform their jobs in a competent manner?

Circle your response using the 5-point scale adjacent to each statement.

(0) Of no importance
(1) Of little importance
(2) Moderately important
(3) Important
(4) Very important

V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION (cont.)	IMPORTANCE
153. Grading practices and procedures	0 1 2 3 4
154. How to select/construct, use, and evaluate instruments for particular objectives (fitness tests, skills tests, affective instruments, etc.)	0 1 2 3 4
E. Professional responsibilities	
155. Professional and scholarly literature (e.g., journals, reference works) appropriate for Physical Education teachers and students	0 1 2 3 4
156. Professional and scholarly organizations for Physical Education teachers and students (e.g., AAHPERD, American College of Sports Medicine [ACSM], President's Council of Physical Fitness and Sport [PCPFS], and State affiliations)	0 1 2 3 4
157. Ethics	0 1 2 3 4
158. **Overall evaluation of the importance of Pedagogy Specific to Physical Education**	0 1 2 3 4

159. How well do the statements in section V cover the important aspects of Pedagogy Specific to Physical Education?

1	2	3	4	5
Very Poorly	Poorly	Adequately	Well	Very Well

What important aspects, if any, are not covered?

PART II - RECOMMENDATIONS FOR TEST CONTENT

Listed below are the five major content areas that you have just finished appraising. If the new licensing examination for Physical Education were to contain a total of 100 questions, how many questions should be included from each content area based on relative overall importance of the category? If you feel a category should not be included in the exam, put 0 in the space provided. Make sure your responses add up to 100.

MAJOR CONTENT AREAS	NUMBER OF TEST QUESTIONS (out of 100)
I. HISTORICAL, PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS	_____
II. SCIENTIFIC FOUNDATIONS	_____
III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT	_____
IV. HEALTH AND SAFETY	_____
V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION	_____
TOTAL	100

If Category V - Pedagogy Specific to Physical Education were to be covered in a separate examination, how many questions should be included from the first four major content areas in a 100-question test?

MAJOR CONTENT AREAS	NUMBER OF TEST QUESTIONS (out of 100)
I. HISTORICAL, PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS	_____
II. SCIENTIFIC FOUNDATIONS	_____
III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT	_____
IV. HEALTH AND SAFETY	_____
TOTAL	100

PART III - BACKGROUND INFORMATION

The information which you provide in answering the questions in this section is completely confidential and will be used for research purposes only. Your responses will be grouped statistically with those of other individuals who are participating in this survey. A vital part of the statistical analysis concerns grouping people with similar experience and backgrounds. To do this, we need your answers to the following questions:

(Circle your response).

160. Where do you work?

1. Alabama
2. Alaska
3. Arizona
4. Arkansas
5. California
6. Colorado
7. Connecticut
8. Delaware
9. District of Columbia
10. Florida
11. Georgia
12. Hawaii
13. Idaho
14. Illinois
15. Indiana
16. Iowa
17. Kansas
18. Kentucky
19. Louisiana
20. Maine
21. Maryland
22. Massachusetts
23. Michigan
24. Minnesota
25. Mississippi
26. Missouri
27. Montana
28. Nebraska
29. Nevada
30. New Hampshire
31. New Jersey
32. New Mexico
33. New York
34. North Carolina
35. North Dakota
36. Ohio
37. Oklahoma
38. Oregon
39. Pennsylvania
40. Puerto Rico
41. Rhode Island
42. South Carolina
43. South Dakota
44. Tennessee
45. Texas
46. Utah
47. Vermont
48. Virginia
49. Washington
50. West Virginia
51. Wisconsin
52. Wyoming

161. What is your age?

1. Under 25
2. 25-34
3. 35-44
4. 45-54
5. 55-64
6. 65 and over

162. What is your sex?

1. Female
2. Male

BACKGROUND INFORMATION (continued)

163. How do you describe yourself?

1. American Indian or Alaskan native
2. Asian, Asian American, or Pacific Islander
3. Black or African American
4. Mexican American or Chicano
5. Puerto Rican
6. Latin American, South American, Central American, or other Hispanic
7. White
8. Other _____

164. Which of the following best describes your highest educational attainment?

1. Less than a Bachelors degree
2. Bachelors degree
3. Bachelors degree + additional credits
4. Masters degree
5. Masters degree + additional credits
6. Doctorate

165. Which of the following best describes your current employment status?

1. Temporary substitute (assigned on a daily basis)
2. Permanent substitute (assigned on a longer term basis)
3. Regular teacher (not a substitute)
4. Principal or Assistant Principal
5. School Administrator
6. Curricular Supervisor
7. State Administrator
8. College Faculty
9. Other (please specify) _____

166. How many years have you taught physical education?

1. Less than a year
2. 1 - 2 years
3. 3 - 5 years
4. 6 - 10 years
5. 11 - 15 years
6. 16 - 20 years
7. 21 or more years
8. Never taught physical education

BACKGROUND INFORMATION (continued)

167. What grade level(s) are you currently teaching? (Circle **only one** category)

1. Preschool/kindergarten
2. Elementary
3. Middle
4. Secondary
5. College or University
6. Do not currently teach
7. Other (please specify) _____

168. Circle the organizations to which you currently belong.

1. American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)
2. National Association for Sport and Physical Education (NASPE)
3. Other (please specify)_____

THANK YOU FOR COMPLETING THIS INVENTORY.
PLEASE RETURN IT WITHIN 10 DAYS USING THE ENCLOSED ENVELOPE.

Appendix C

Survey Cover Letter

EDUCATIONAL TESTING SERVICE PRINCETON, N.J. 08541

609-921-9000
609-734-1090 (Fax)
CABLE-EDUCTESTSVC

DIVISION OF APPLIED
MEASUREMENT RESEARCH

May 1991

Dear Colleague:

I am writing to ask your cooperation in a project that should be of importance to teachers, college faculty, administrators, and other professionals in the field. Educational Testing Service (ETS) is in the process of developing a new generation of assessments for the purpose of licensing teachers. One type of assessment will be created to measure the prospective teacher's subject-matter or specialty-area knowledge and will likely be administered upon completion of the undergraduate teacher education program. One such assessment is a new version of the NTE Physical Education examination. I am asking for your help as we develop this examination.

As part of the developmental process, ETS has worked closely with an advisory committee of classroom teachers, college faculty, and school administrators to identify potentially important knowledge and skill areas in physical education instruction. The enclosed inventory has been constructed as a way to obtain your judgments of the importance of these areas for newly licensed (certified) physical education teachers. Your responses and those of other professionals to this inventory will guide the development of the new examination.

You will notice that the inventory asks for some background information about you; this is solely for purposes of describing respondents. **Your answers will be treated in strict confidence.**

A postage-paid envelope is enclosed for the return of your completed inventory. Thank you for your participation in this important project.

Sincerely,

Judith Norback

Judith Norback, Ph.D.
Research Scientist

Enclosures (2)

Appendix D

Demographic Distributions

	PRIMARY (N = 496)		SUPPLEMENTAL (N = 43)	
	Number	Percent	Number	Percent
AGE (years)				
Under 25	4	0.8	0	0.0
25-34	102	20.6	1	23.0
35-44	210	42.3	12	27.9
45-54	110	22.2	19	44.2
55-64	59	11.9	10	23.3
65 and over	1	0.2	1	2.3
No response	10	2.0	0	0.0
SEX				
Female	297	59.9	24	55.8
Male	188	37.9	19	44.2
No response	11	2.2	0	0.0
RACE/ETHNICITY				
American Indian or Alaskan Native	2	0.4	0	0.0
Asian, Asian American, or Pacific Islander	8	1.6	0	0.0
Black or African American	18	3.6	43	100.0
Mexican American or Chicano	0	0.0	0	0.0
Puerto Rican	0	0.0	0	0.0
Latin American, South American, Central American, or other Hispanic	0	0.0	0	0.0
White	451	90.9	0	0.0
Other	5	1.0	0	0.0
No response	12	2.4	0	0.0
HIGHEST EDUCATIONAL ATTAINMENT				
Less than Bachelor's	0	0.0	0	0.0
Bachelor's	10	2.0	2	4.7
Bachelor's + Credits	96	19.4	0	0.0
Master's	58	11.7	3	7.0
Master's + Credits	184	37.1	21	48.8
Doctorate	136	27.4	16	37.2
No response	12	2.4	1	2.3

	PRIMARY (N = 496)		SUPPLEMENTAL (N = 43)	
	Number	Percent	Number	Percent
CURRENT EMPLOYMENT STATUS				
Temporary Substitute	1	0.2	0	0.0
Permanent Substitute	1	0.2	1	2.3
Regular Teacher (not a substitute)	267	53.8	12	27.9
Principal or Assistant Principal	2	0.4	0	0.0
School Administrator	2	0.4	0	0.0
Curricular Supervisor	3	0.6	0	0.0
State Administrator	18	3.6	0	0.0
College or University Faculty	158	31.9	26	60.5
Other	19	3.8	4	9.3
No response	25	5.0	0	0.0
TEACHING EXPERIENCE (years)				
Less than 1 year	2	0.4	0	0.0
1-2	15	3.0	0	0.0
3-5	34	6.9	0	0.0
6-10	78	15.7	4	9.3
11-15	83	16.7	2	4.7
16-20	103	20.8	10	23.3
21 or more	166	33.5	27	62.8
Never taught physical education	5	1.0	0	0.0
No response	10	2.0	0	0.0
GRADES CURRENTLY TEACHING				
Preschool/Kindergarten	0	0.0	0	0.0
Elementary School	106	21.4	1	2.3
Middle School	54	10.9	6	14.0
Secondary School	87	17.5	8	18.6
College or University	165	33.3	26	60.5
Do Not Currently Teach	20	4.0	1	2.3
Other	34	6.9	1	2.3
No response	30	6.0	0	0.0

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	PRIMARY (N = 496)		SUPPLEMENTAL (N = 43)	
	Number	Percent	Number	Percent
MEMBERSHIP IN ORGANIZATIONS				
American Alliance for Health, Physical Education, Recreation, and Dance	481	97.0	36	83.7
National Association for Sport and Physical Education	335	67.5	17	39.5
Other	311	62.7	26	60.4
No response	8	1.6	3	7.0

Appendix E

Mean Importance Ratings

	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
I. HISTORICAL, PHILOSOPHICAL, AND SOCIOLOGICAL FOUNDATIONS						
A. Historical Foundations						
Historical development of physical education and sport in various cultures (e.g., Greek and other European, African, Asian, Native American)						
1. Competition	2.05	0.90	2.37	0.92	2.74	0.91
2. Universality of play	2.44	0.95	2.71	0.98	2.95	0.88
3. Nationalism (e.g., identification of particular nations with specific sports)	2.11	0.86	2.04	0.88	2.64	0.96
4. Preparation for war	1.49	0.96	1.58	1.00	2.07	1.24
5. Health/fitness	3.29	0.86	3.26	0.85	3.67	0.57
6. Comparative physical education and sports	2.24	0.98	2.43	1.01	2.85	0.88
7. Leading philosophers and major issues in the history of physical education	2.27	0.96	2.83	1.02	3.12	0.91
B. Current philosophical issues in physical education						
8. Purpose of Physical Education	3.71	0.55	3.85	0.39	3.93	0.26
9. Relationship between teaching and coaching	3.18	0.90	3.34	0.88	3.51	0.70
10. Accountability	3.65	0.61	3.62	0.62	3.83	0.38
11. Roles, benefits and effects of competition	3.14	0.82	3.05	0.84	3.26	0.73
C. Sociological/Sociopolitical Issues						
Cultural considerations						
12. Multi-cultural factors	2.59	0.83	2.87	0.89	3.33	0.75
13. Politics factors	1.80	0.93	2.16	0.89	2.49	1.03
14. Economic factors	2.21	0.91	2.36	0.89	2.72	0.98
15. Educational factors	2.92	0.91	3.07	0.86	3.56	0.73
16. Religious factors	1.79	0.92	1.87	1.00	2.32	1.01

	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
Equity considerations						
17. PL 94-142	3.29	0.82	3.52	0.69	3.41	0.95
18. Title IX	3.27	0.83	3.51	0.70	3.53	0.85
19. The women's movement	2.80	0.95	2.84	1.00	3.19	0.91
20. Affirmative action	2.86	0.94	3.03	0.94	3.30	0.91
21. Overall importance of Historical, Philosophical and Sociological Foundations	2.62	0.74	2.86	0.77	3.26	0.69
II. SCIENTIFIC FOUNDATIONS						
A. Psychological						
Personality/participation relationships						
23. Self-esteem	3.67	0.57	3.44	0.72	3.67	0.64
24. Body image	3.45	0.66	3.29	0.76	3.51	0.83
25. Motivation	3.67	0.52	3.54	0.67	3.67	0.57
26. Coping ability or skills	3.50	0.62	3.23	0.83	3.55	0.63
27. Stress and anxiety	3.42	0.70	3.21	0.64	3.60	0.59
28. Aggressiveness	3.04	0.90	2.85	0.86	3.17	0.76
29. Self discipline	3.66	0.59	3.38	0.77	3.79	0.47
Social psychological/participation relationships						
30. Role modeling by persons of influence	3.47	0.66	3.28	0.89	3.55	0.59
31. Reinforcement	3.49	0.63	3.40	0.75	3.51	0.59
32. Peer pressure	3.36	0.74	3.19	0.84	3.33	0.87
33. Group cohesion	3.31	0.72	3.04	0.83	3.47	0.50
34. Family dysfunction (e.g., death in the family, divorce)	3.14	0.85	2.68	1.00	3.28	0.70

	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
Cooperation						
35. Mutual support	3.39	0.73	3.09	0.87	3.47	0.55
36. Appreciation	3.32	0.74	3.06	0.81	3.42	0.63
37. Competition	2.95	0.87	2.87	0.81	3.07	0.67
38. Leadership	3.48	0.65	3.28	0.76	3.65	0.48
B. Biological						
Human anatomy and physiology						
39. Identification of functions of major muscles and bones	3.42	0.70	3.42	0.76	3.56	0.59
40. Identification of major systems of the body and their functions	3.42	0.70	3.49	0.68	3.69	0.52
Physiology of exercise						
41. Terminology of exercise physiology (e.g., oxygen uptake)	3.17	0.83	3.32	0.76	3.45	0.67
42. Components of fitness (e.g., cardiovascular, muscular)	3.71	0.53	3.87	0.35	3.79	0.47
43. Principles of exercise (e.g., isotonic, overload, aerobic)	3.60	0.61	3.85	0.39	3.79	0.47
44. Roles of cardiovascular, respiratory, muscular and nervous systems in exercise	3.65	0.62	3.74	0.49	3.81	0.40
45. Short and long term effects of physical training	3.63	0.64	3.76	0.46	3.76	0.43
46. Relationships of nutrition to fitness	3.65	0.57	3.72	0.50	3.86	0.35
C. Growth and Motor Development						
47. The role perception plays in motor development (e.g., spatial movement relationships)	3.38	0.69	3.38	0.74	3.50	0.59
48. Neurophysiology of motor control	3.00	0.81	2.73	0.94	3.38	0.70
49. The effects of maturation and experience on motor patterns	3.35	0.73	3.46	0.71	3.67	0.48
50. Biological and environmental influences on gender differences in motor performances	3.13	0.81	3.26	0.84	3.50	0.50

		Primary				Supplementary N = 43	
		Teachers N = 268		Teacher Educators N = 158			
		MEAN	SD	MEAN	SD	MEAN	SD
D.	**Biomechanics**						
51.	Terminology of Biomechanics (e.g., mass, force, friction)	2.63	0.86	2.94	0.88	3.12	0.74
52.	Basic principles of movement (e.g., summation of forces, center of gravity)	2.88	0.85	3.26	0.79	3.31	0.64
53.	Application of basic principles of movement to sports skills	3.33	0.80	3.66	0.57	3.57	0.59
54.	Methods of analyzing movement (e.g., cinematographic/noncinematographic)	2.62	0.97	2.72	1.07	3.10	0.82
55.	Analysis of basic movement patterns (e.g., overhand throw, kick)	3.56	0.65	3.70	0.62	3.50	0.67
E.	**Motor Learning**						
56.	Classical and current theories of motor learning (e.g., closed loop systems, motor control)	2.71	0.90	2.71	0.98	3.17	0.77
57.	Variables which affect learning and performance	3.22	0.80	3.60	0.62	3.59	0.59
58.	Effects of individual differences on learning/performance (e.g., perception, attention)	3.32	0.71	3.53	0.70	3.67	0.53
59.	Overall importance of Scientific Foundations	3.37	0.67	3.58	0.58	3.52	0.59
III.	**CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT**						
A.	**Fundamental Skills**						
61.	Locomotor	3.66	0.54	3.69	0.60	3.60	0.54
62.	Nonlocomotor	3.52	0.64	3.57	0.71	3.50	0.63
63.	Manipulative	3.51	0.65	3.62	0.65	3.49	0.59
64.	Falling, and landing skills	3.42	0.69	3.48	0.73	3.60	0.63
B.	**Dance and Rhythmic Activities**						
65.	History	2.00	0.81	1.86	0.93	2.70	0.71
66.	Skill analysis	2.80	0.89	3.11	0.91	3.35	0.69
67.	Characteristics of accompaniment	2.25	0.88	2.03	0.96	2.90	0.69
68.	Choreography	2.23	0.88	1.94	0.94	2.67	0.89

	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
69. Dance forms	2.40	0.92	2.45	0.91	2.91	0.95
70. Analysis of body, space, effort, relationship (e.g., Laban analysis)	2.86	0.95	2.85	1.06	3.21	0.89
C. Fitness						
71. Components (cardiovascular endurance, flexibility, body composition)	3.82	0.44	3.89	0.35	3.79	0.41
Conditioning practices and principles (frequency, intensity, time or duration, role of exercise)						
72. Aerobic or cardiorespiratory	3.74	0.51	3.86	0.34	3.60	0.58
73. Resistance training	3.40	0.70	3.63	0.60	3.37	0.66
74. Flexibility training	3.58	062	3.71	0.51	3.47	0.59
Safety and injury prevention considerations						
75. Warmup and cool down	3.80	0.46	3.72	0.58	3.72	0.55
76. Knowledge of harmful exercises	3.82	0.42	3.82	0.42	3.74	0.49
77. Environmental conditions	3.42	0.69	3.45	0.71	3.53	0.55
D. Games						
78. Cooperative	3.69	0.50	3.53	0.69	3.44	0.67
79. Competitive	3.15	0.86	3.12	0.83	3.14	0.78
80. Skill analysis	3.57	0.62	3.65	0.59	3.60	0.58
81. Rules/strategies	3.41	0.66	3.26	0.75	3.60	0.59
82. Game forms (e.g., invasion, chasing)	3.23	0.74	2.99	0.87	3.37	0.66
E. Individual/Dual/Team Sports						
83. History	2.19	0.86	1.96	0.93	3.00	0.79
84. Facilities and equipment	3.13	0.79	2.88	0.84	3.42	0.70
85. Skill analysis	3.52	0.64	3.70	0.57	3.63	0.54

	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
86. Safety and injury prevention	3.82	0.40	3.74	0.53	3.88	0.32
87. Rules/strategies	3.32	0.71	3.25	0.77	3.58	0.63
List of sports						
88. Archery	2.52	0.93	2.35	0.93	2.86	0.80
89. Badminton	2.96	0.80	3.03	0.82	3.23	0.68
90. Basketball	3.28	0.71	3.23	0.79	3.19	0.76
91. Diving	1.89	0.90	1.65	0.97	2.58	1.03
92. Fencing	1.81	0.98	1.59	0.94	2.42	1.05
93. Field hockey	2.46	0.93	2.25	1.08	2.67	0.94
94. Football	2.89	0.84	2.65	1.00	3.12	0.94
95. Golf	2.95	0.91	3.15	0.81	3.21	0.94
96. Lacrosse	2.19	0.99	1.90	1.04	2.40	0.98
97. Racquetball	2.81	0.96	3.01	0.88	3.12	0.91
98. Soccer	3.26	0.72	3.29	0.81	3.12	0.79
99. Softball	3.26	0.70	3.03	0.96	3.23	0.75
100. Swimming	3.19	0.87	3.31	0.88	3.37	0.93
101. Tennis	3.22	0.74	3.40	0.69	3.30	0.80
102. Track and field	3.11	0.80	3.03	0.93	3.16	0.78
103. Volleyball	3.37	0.68	3.33	0.72	3.33	0.68
104. Wrestling	2.20	0.99	2.06	1.03	2.65	0.84
105. Lifetime activities and recreational pursuits (bowling, table tennis)	3.38	0.75	3.02	0.98	3.49	0.70
106. Adventure and outdoor pursuits (e.g., kayaking, rock climbing, martial arts)	2.70	0.89	2.89	0.94	2.79	0.60

		Primary				Supplementary N = 43	
		Teachers N = 268		Teacher Educators N = 158			
		MEAN	SD	MEAN	SD	MEAN	SD
Gymnastics							
107.	Stunts and tumbling	2.94	0.88	2.96	0.92	3.19	0.77
108.	Apparatus work	2.50	0.91	2.30	1.00	2.79	0.86
109.	Educational (movement themes)	2.87	0.90	2.91	1.03	3.23	0.78
110.	Overall importance of Concepts Relating to Motor Skills/Fitness/Sport	3.49	0.59	3.49	0.55	3.41	0.64
IV.	**HEALTH AND SAFETY**						
A.	**Health Appraisals and Referrals**						
112.	Health related fitness appraisals	3.40	0.69	3.59	0.66	3.49	0.59
113.	Personal goal setting and assessment	3.43	0.71	3.49	0.69	3.49	0.59
114.	Considerations related to P.L. 94-142	3.27	0.71	3.43	0.69	3.51	0.56
B.	**Handling Accidents and Illnesses**						
115.	First Aid	3.78	0.46	3.83	0.43	3.81	0.39
116.	CPR	3.77	0.46	3.85	0.36	3.74	0.58
117.	Lifesaving/water safety	3.22	0.84	2.94	0.92	3.49	0.70
118.	Certification	3.35	0.80	3.09	0.96	3.44	0.67
C.	**Liability and Legal Aspects**						
119.	Equipment	3.68	0.53	3.53	0.70	3.67	0.57
120.	Class organization/supervision	3.84	0.41	3.74	0.53	3.84	0.37
121.	Program selection	3.61	0.59	3.58	0.61	3.58	0.63
122.	Effects of substance abuse on performance and behavior	3.51	0.63	3.42	0.74	3.65	0.53
123.	Overall importance of Health and Safety	3.70	0.49	3.62	0.56	3.71	0.46

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	Primary				Supplementary N = 43	
	Teachers N = 268		Teacher Educators N = 158			
	MEAN	SD	MEAN	SD	MEAN	SD
V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION						
A. K-12 Program Development						
125. Goals and aims for teaching Physical Education in the K-12 curriculum	3.78	0.46	3.82	0.42	3.73	0.45
Program considerations						
126. Coeducational	3.38	0.66	3.49	0.71	3.40	0.69
127. Extracurricular	2.98	0.79	2.88	0.81	3.21	0.67
128. Adaptive	3.29	0.74	3.35	0.73	3.53	0.59
129. Intramural	2.99	0.80	2.93	0.81	3.35	0.69
130. Community-based	2.65	0.78	2.60	0.89	2.88	0.71
131. Required/selective/elective classes	2.91	0.78	2.99	0.81	3.23	0.72
132. How to develop K-12 curriculum	3.43	0.79	3.58	0.67	3.56	0.63
133. How to implement K-12 curriculum	3.43	0.75	3.52	0.71	3.57	0.59
134. How to evaluate K-12 curriculum	3.41	0.74	3.52	0.73	3.51	0.63
B. Classroom Program Development						
135. Rationale for the choice of a particular curricular model	3.05	0.76	3.23	0.76	3.40	0.62
136. Relationships among content areas in Physical Education	3.18	0.71	3.32	0.67	3.44	0.70
137. Relationships between Physical Education and other subject matter areas	3.11	0.76	3.18	0.78	3.35	0.61
138. Justification for the scope and sequence of content for a particular group of students	3.28	0.71	3.38	0.75	3.47	0.67
139. How to prepare, evaluate, and justify lesson and unit plans for a particular group of students	3.55	0.61	3.70	0.54	3.67	0.53
How to select, evaluate and use:						
140. Curricular materials and resources (e.g., textbooks, computer software)	3.15	0.78	3.32	0.68	3.47	0.63
141. Community resources	2.97	0.82	3.04	0.82	3.09	0.81

		Primary				Supplementary N = 43	
		Teachers N = 268		Teacher Educators N = 158			
		MEAN	SD	MEAN	SD	MEAN	SD
142.	Instructional media and hardware (e.g., film, television, video)	2.88	0.82	3.08	0.78	3.16	0.72
143.	Equipment and facilities	3.44	0.68	3.44	0.69	3.40	0.66
C.	**Instruction**						
144.	Critical characteristics that influence how a student learns	3.30	0.71	3.54	0.66	3.37	0.62
145.	Prerequisite knowledge, experience, and skills that students need	3.28	0.70	3.56	0.64	3.26	0.82
146.	Ways of presenting/demonstrating/explaining content in Physical Education	3.75	0.48	3.84	0.43	3.67	0.61
147.	Instructional strategies and activities as related to specific objectives	3.50	0.69	3.68	0.58	3.67	0.52
148.	Strategies for motivating and encouraging students to succeed in Physical Education	3.76	0.49	3.81	0.44	3.72	0.45
149.	Classroom management techniques for Physical Education	3.81	0.43	3.78	0.47	3.77	0.43
D.	**Assessment**						
150.	Evaluation strategies used to assess student needs, readiness and performance	3.52	0.63	3.75	0.49	3.63	0.54
151.	Problems in student's performance and knowledge which arise from misconceptions	3.18	0.76	3.20	0.88	3.44	0.63
152.	Values and purposes of evaluation	3.26	0.72	3.45	0.68	3.51	0.67
153.	Grading practices and procedures	3.29	0.77	3.55	0.59	3.47	0.67
154.	How to select/construct, use and evaluate instruments for particular objectives	3.41	0.68	3.60	0.59	3.67	0.47
E.	**Professional Responsibilities**						
155.	Professional and scholarly literature appropriate for teachers and students	3.09	0.75	3.37	0.69	3.47	0.67
156.	Professional and scholarly organizations for teachers and students	3.29	0.75	3.42	0.69	3.59	0.55
157.	Ethics	3.58	0.59	3.70	0.54	3.73	0.45
158.	Overall importance of Pedagogy Specific to Physical Education	3.53	0.54	3.72	0.48	3.55	0.55

APPENDIX F

Means Importance Ratings by Subgroups

	Race		Sex		Geographic Region				Teaching Experience	
	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
I. HISTORICAL, PHILOSOPHICAL AND SOCIOLOGICAL FOUNDATIONS										
A. Historical Foundations										
Historical development of physical education and sport in various cultures (e.g., Greek and other European, African, Asian, Native American)										
1. Competition	2.61	2.15	2.14	2.34	2.27	2.04	2.28	2.27	2.15	2.06
2. Universality of play	2.89	2.54	2.52	2.70	2.71	2.42	2.55	2.72	2.53	2.44
3. Nationalism (e.g., identification of particular nations with specific sports)	2.51	2.06	2.05	2.25	2.32	1.89	2.23	2.07	2.24	2.10
4. Preparation for war	2.11	1.50	1.57	1.62	1.56	1.39	1.78	1.58	1.47	1.51
5. Health/fitness	3.68	3.28	3.29	3.41	3.35	3.25	3.33	3.43	3.38	3.30
6. Comparative physical education and sports	2.86	2.29	2.26	2.53	2.49	2.11	2.53	2.33	2.24	2.25
7. Leading philosophers and major issues in the history of physical education	3.05	2.46	2.47	2.67	2.58	2.29	2.68	2.61	2.21	2.31
B. Current philosophical issues in physical education										
8. Purpose of Physical Education	3.89	3.77	3.77	3.82	3.83	3.69	3.80	3.84	3.76	3.72
9. Relationship between teaching and coaching	3.41	3.25	3.23	3.32	3.33	3.16	3.35	3.21	3.15	3.21
10. Accountability	3.76	3.66	3.69	3.65	3.69	3.55	3.73	3.72	3.76	3.65
11. Roles, benefits and effects of competition	3.31	3.10	3.12	3.14	3.31	3.00	3.15	3.06	3.21	3.14
C. Sociological/Sociopolitical Issues										
Cultural considerations										
12. Multi-cultural factors	3.24	2.68	2.73	2.81	2.92	2.65	2.68	2.83	2.62	2.62
13. Politics factors	2.33	1.94	1.94	2.09	2.04	1.85	2.01	2.10	1.92	1.81
14. Economic factors	2.64	2.27	2.27	2.42	2.40	2.21	2.36	2.34	2.14	2.24

M = Minority; W = White; F = Female; M = Male; NE = Northeast; C = Central; S = South; FW = Far West; ≤5 = Less than or equal to 5 years teaching experience; >5 = More than 5 years teaching experience.

	Race		Sex		Geographic Region				Teaching Experience	
	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
15. Educational factors	3.49	2.98	3.00	3.15	3.05	3.02	3.04	3.11	3.06	2.93
16. Religious factors	2.16	1.81	1.87	1.86	1.76	1.78	1.99	1.87	1.67	1.84
Equity considerations										
17. PL 94-142	3.44	3.37	3.44	3.29	3.48	3.36	3.28	3.45	3.53	3.24
18. Title IX	3.50	3.36	3.45	3.28	3.44	3.26	3.31	3.53	3.47	3.24
19. The women's movement	3.09	2.81	2.94	2.71	2.89	2.70	2.86	2.94	2.83	2.81
20. Affirmative action	3.28	2.91	3.06	2.82	3.05	2.84	2.93	3.05	2.91	2.88
21. Overall importance of Historical, Philosophical and Sociological Foundations	3.20	2.69	2.75	2.79	2.78	2.62	2.83	2.81	2.60	2.63
II. SCIENTIFIC FOUNDATIONS										
A. Psychological										
Personality/participation relationships										
23. Self-esteem	3.70	3.60	3.68	3.51	3.62	3.66	3.53	3.67	3.72	3.66
24. Body image	3.50	3.39	3.46	3.31	3.39	3.40	3.37	3.49	3.53	3.44
25. Motivation	3.70	3.62	3.70	3.52	3.63	3.69	3.59	3.63	3.81	3.65
26. Coping ability or skills	3.55	3.40	3.50	3.29	3.40	3.39	3.44	3.45	3.44	3.50
27. Stress and anxiety	3.52	3.35	3.43	3.27	3.35	3.34	3.39	3.38	3.56	3.42
28. Aggressiveness	3.15	2.95	3.07	2.85	2.98	2.85	3.02	3.05	3.17	3.04
29. Self discipline	3.74	3.55	3.61	3.51	3.50	3.56	3.64	3.56	3.61	3.67
Social psychological/participation relationships										
30. Role modeling by persons of influence	3.48	3.40	3.43	3.38	3.35	3.41	3.43	3.44	3.50	3.47
31. Reinforcement	3.47	3.46	3.52	3.37	3.42	3.45	3.45	3.52	3.56	3.47
32. Peer pressure	3.36	3.30	3.33	3.27	3.29	3.22	3.33	3.38	3.33	3.37

M = Minority; W = White; F = Female; M = Male; NE = Northeast; C = Central; S = South; FW = Far West; ≤5 = Less than or equal to 5 years teaching experience; >5 = More than 5 years teaching experience.

	Race		Sex		Geographic Region				Teaching Experience	
	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
33. Group cohesion	3.41	3.21	3.31	3.13	3.23	3.11	3.25	3.34	3.39	3.30
34. Family dysfunction (e.g., death in the family, divorce)	3.16	2.98	3.07	2.91	2.99	2.96	3.10	2.94	3.17	3.14
Cooperation										
35. Mutual support	3.41	3.28	3.37	3.19	3.35	3.28	3.28	3.29	3.58	3.36
36. Appreciation	3.38	3.22	3.28	3.19	3.22	3.28	3.25	3.21	3.53	3.29
37. Competition	2.99	2.91	2.95	2.87	2.95	2.85	2.92	2.95	2.97	2.96
38. Leadership	3.61	3.40	3.44	3.40	3.50	3.35	3.45	3.41	3.58	3.47
B. Biological										
Human anatomy and physiology										
39. Identification of functions of major muscles and bones	3.54	3.41	3.46	3.38	3.57	3.31	3.45	3.41	3.58	3.40
40. Identification of major systems of the body and their functions	3.64	3.45	3.47	3.47	3.58	3.33	3.49	3.48	3.44	3.44
Physiology of exercise										
41. Terminology of exercise physiology (e.g., oxygen uptake)	3.39	3.24	3.27	3.23	3.40	1.09	3.26	3.30	3.31	3.17
42. Components of fitness (e.g., cardiovascular, muscular)	3.73	3.80	3.81	3.76	3.85	3.72	3.77	3.85	3.75	3.71
43. Principles of exercise (e.g., isotonic, overload, aerobic)	3.71	3.72	3.70	3.73	3.82	3.65	3.66	3.75	3.64	3.60
44. Roles of cardiovascular, respiratory, muscular, and nervous systems in exercise	3.69	3.69	3.70	3.67	3.75	3.65	3.65	3.72	3.78	3.64
45. Short and long term effects of physical training	3.67	3.70	3.69	3.69	3.78	3.62	3.65	3.73	3.78	3.62
46. Relationships of nutrition to fitness	3.77	3.69	3.73	3.65	3.74	3.67	3.71	3.69	3.78	3.65
C. Growth and Motor Development										
47. The role perception plays in motor development (e.g., spatial movement relationships)	3.45	3.37	3.43	3.31	3.44	3.30	3.39	3.42	3.58	3.37
48. Neurophysiology of motor control	3.25	2.91	2.97	2.95	3.06	2.89	3.02	2.86	3.11	3.03

M = Minority; W = White; F = Female; M = Male; NE = Northeast; C = Central; S = South; FW = Far West; ≤5 = Less than or equal to 5 years teaching experience; >5 = More than 5 years teaching experience

	Race		Sex		Geographic Region				Teaching Experience	
	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
49. The effects of maturation and experience on motor patterns	3.57	3.39	3.48	3.33	3.48	3.35	3.37	3.48	3.61	3.34
50. Biological and environmental influences on gender differences in motor performances	3.43	3.17	3.26	3.13	3.22	3.11	3.21	3.29	3.33	3.12
D. Biomechanics										
51. Terminology of Biomechanics (e.g., mass, force, friction)	3.03	2.74	2.74	2.85	2.84	2.59	2.82	2.87	2.50	2.68
52. Basic principles of movement (e.g., summation of forces, center of gravity)	3.29	3.00	3.01	3.10	3.12	2.85	3.05	3.17	2.83	2.91
53. Application of basic principles of movement to sports skills	3.59	3.45	3.47	3.45	3.52	3.27	3.46	3.62	3.42	3.33
54. Methods of analyzing movement (e.g., cinematographic/noncinematographic)	2.93	2.65	2.67	2.72	2.65	2.53	2.77	2.79	2.72	2.63
55. Analysis of basic movement patterns (e.g., overhand throw, kick)	3.61	3.58	3.64	3.50	3.60	3.44	3.59	3.72	3.64	3.54
E. Motor Learning										
56. Classical and current theories of motor learning (e.g., closed loop systems, motor control)	3.15	2.70	2.72	2.82	2.89	2.54	2.78	2.84	2.64	2.76
57. Variables which affect learning and performance (e.g.,	3.49	3.36	3.41	3.33	3.46	3.21	3.34	3.52	3.53	3.19
58. Effects if individual differences on learning/performance (e.g., perception, attention)	3.53	3.40	3.47	3.33	3.45	3.34	3.41	3.46	3.39	3.33
59. Overall importance of Scientific Foundations	3.45	3.46	3.45	3.47	3.53	3.37	3.38	3.59	3.39	3.38
III. CONCEPTS RELATING TO MOTOR SKILLS/FITNESS/SPORT										
A. Fundamental Skills										
61. Locomotor	3.64	3.66	3.73	3.56	3.74	3.65	3.57	3.74	3.73	3.64
62. Nonlocomotor	3.56	3.52	3.64	3.36	3.62	3.55	3.43	3.57	3.61	3.49
63. Manipulative	3.53	3.54	3.63	3.41	3.64	3.53	3.45	3.60	3.67	3.49
64. Falling, and landing skills	3.61	3.43	3.55	3.31	3.54	3.36	3.47	3.48	3.39	3.44

M = Minority; W = White; F = Female; M = Male; NE = Northeast; C = Central; S = South; FW = Far West; ≤5 = Less than or equal to 5 years teaching experience; >5 = More than 5 years teaching experience.

	Race		Sex		Geographic Region				Teaching Experience	
	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
81. Rules/strategies	3.44	3.36	3.43	3.26	3.39	3.23	3.46	3.40	3.61	3.41
82. Game forms (e.g., invasion, chasing)	3.26	3.14	3.22	3.07	3.34	2.90	3.21	3.18	3.30	3.24
E. Individual/Dual/Team Sports										
83. History	2.91	2.07	2.21	2.17	2.31	1.91	2.42	2.07	2.15	2.25
84. Facilities and equipment	3.33	3.03	3.13	2.97	3.16	2.83	3.23	3.02	3.21	3.16
85. Skill analysis	3.51	3.60	3.61	3.56	3.63	3.51	3.56	3.66	3.39	3.55
86. Safety and injury prevention	3.80	3.81	3.85	3.75	3.84	3.70	3.87	3.81	3.94	3.81
87. Rules/strategies	3.46	3.30	3.39	3.20	3.37	3.21	3.42	3.25	3.53	3.31
List of sports										
88. Archery	2.70	2.46	2.51	2.47	2.52	2.39	2.59	2.44	2.49	2.55
89. Badminton	3.11	2.99	3.09	2.89	2.99	2.88	3.12	3.00	3.08	2.97
90. Basketball	3.20	3.25	3.28	3.19	3.25	3.10	3.30	3.30	3.42	3.26
91. Diving	2.37	1.81	1.84	1.95	1.91	1.85	2.03	1.73	1.89	1.94
92. Fencing	2.20	1.75	1.81	1.83	1.86	1.66	1.93	1.75	1.97	1.82
93. Field hockey	2.56	2.38	2.48	2.29	2.76	2.10	2.39	2.43	2.78	2.43
94. Football	3.08	2.77	2.83	2.79	2.79	2.65	3.02	2.76	3.06	2.89
95. Golf	3.08	3.04	3.05	3.03	2.91	3.15	3.07	3.04	2.94	2.96
96. Lacrosse	2.24	2.08	2.13	2.07	2.68	1.80	2.15	1.87	2.28	2.19
97. Racquetball	2.99	2.92	2.93	2.93	2.82	2.90	2.96	3.02	2.83	2.83
98. Soccer	3.09	3.30	3.33	3.17	3.28	3.16	3.29	3.33	3.47	3.23
99. Softball	3.20	3.19	3.27	3.05	3.18	3.06	3.32	3.13	3.31	3.27
100. Swimming	3.41	3.24	3.26	3.27	3.17	3.31	3.20	3.39	3.14	3.22

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	M N=76	W N=451	F N=321	M N=207	N N =	C N =	S N =	FW N =	≤ 5 N=52	> 5 N=477
101. Tennis	3.28	3.31	3.88	3.19	3.28	3.24	3.36	3.33	3.17	3.24
102. Track and field	3.07	3.07	3.14	2.94	3.16	2.85	3.19	3.03	3.39	3.07
103. Volleyball	3.26	3.37	3.42	3.26	3.32	3.24	3.41	3.43	3.47	3.36
104. Wrestling	2.42	2.16	2.14	2.27	2.33	1.99	2.28	2.17	2.25	2.22
105. Lifetime activities and recreational pursuits (bowling, table tennis)	3.51	3.26	3.30	3.30	3.25	3.21	3.39	3.31	3.47	3.37
106. Adventure and outdoor pursuits (e.g., kayaking, rock climbing, martial arts)	2.86	2.79	2.74	2.89	2.82	2.71	2.77	2.91	2.92	2.68
Gymnastics										
107. Stunts and tumbling	3.13	2.93	2.99	2.90	3.09	2.72	3.02	3.02	3.17	2.92
108. Apparatus work	2.63	2.43	2.48	2.43	2.78	2.31	2.47	2.34	2.64	2.50
109. Educational (movement themes)	3.21	2.87	2.97	2.83	3.14	2.71	2.90	2.95	3.03	2.85
110. Overall importance of Concepts Relating to Motor Skills/Fitness/Sport	3.45	3.49	3.55	3.39	3.54	3.46	3.46	3.51	3.58	3.47
IV. HEALTH AND SAFETY										
A. Health Appraisals and Referrals										
112. Health related fitness appraisals	3.49	3.49	3.50	3.47	3.50	3.45	3.48	3.53	3.37	3.41
113. Personal goal setting and assessment	3.47	3.48	3.53	3.38	3.52	3.46	3.43	3.51	3.58	3.41
114. Considerations related to P.L. 94-142	3.43	3.35	3.41	3.28	3.46	3.34	3.30	3.37	3.39	3.26
B. Handling Accidents and Illnesses										
115. First Aid	3.82	3.79	3.82	3.74	3.89	3.73	3.78	3.78	3.89	3.76
116. CPR	3.75	3.81	3.80	3.78	3.86	3.76	3.78	3.78	3.89	3.75
117. Lifesaving/water safety	3.42	3.12	3.13	3.21	3.14	3.08	3.22	3.20	3.14	3.26
118. Certification	3.36	3.25	3.30	3.20	3.25	3.15	3.25	3.39	3.61	3.34

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C. Liability and Legal Aspects										
119. Equipment	3.59	3.63	3.68	3.55	3.68	3.60	3.61	3.63	3.69	3.68
120. Class organization/supervision	3.74	3.80	3.86	3.69	3.82	3.77	3.78	3.82	3.89	3.84
121. Program selection	3.55	3.59	3.66	3.46	3.59	3.56	3.58	3.60	3.58	3.61
122. Effects of substance abuse on performance and behavior	3.61	3.48	3.55	3.42	3.48	3.43	3.54	3.54	3.50	3.54
123. Overall importance of Health and Safety	3.69	3.68	3.73	3.60	3.70	3.63	3.67	3.70	3.80	3.69
V. PEDAGOGY SPECIFIC TO PHYSICAL EDUCATION										
A. K-12 Program Development										
125. Goals and aims for teaching Physical Education in the K-12 curriculum	3.63	3.82	3.80	3.77	3.82	3.76	3.77	3.82	3.86	3.75
Program considerations										
126. Coeducational	3.34	3.44	3.44	3.40	3.51	3.38	3.32	3.53	3.39	3.38
127. Extracurricular	3.12	2.95	2.98	2.95	3.15	2.82	3.02	2.89	3.11	2.99
128. Adaptive	3.45	3.33	3.39	3.28	3.41	3.31	3.32	3.36	3.44	3.29
129. Intramural	3.11	2.98	3.02	2.96	3.14	2.86	3.02	2.98	3.06	3.01
130. Community-based	2.81	2.63	2.62	2.71	2.71	2.50	2.71	2.69	2.64	2.68
131. Required/selective/elective classes	3.20	2.94	2.99	2.97	3.09	2.88	3.04	2.90	2.97	2.91
132. How to develop K-12 curriculum	3.46	3.49	3.52	3.45	3.54	3.45	3.44	3.55	3.75	3.39
133. How to implement K-12 curriculum	3.56	3.45	3.46	3.48	3.53	3.38	3.48	3.50	3.72	3.40
134. How to evaluate K-12 curriculum	3.43	3.46	3.46	3.46	3.48	3.38	3.46	3.50	3.58	3.40
B. Classroom Program Development										
135. Rationale for the choice of a particular curricular model	3.33	3.10	3.14	3.12	3.18	3.01	3.16	3.18	3.14	3.05
136. Relationships among content areas in Physical Education	3.39	3.23	3.27	3.21	3.31	3.14	3.24	3.30	3.25	3.19

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137. Relationships between Physical Education and other subject matter areas	3.32	3.14	3.18	3.14	3.23	3.01	3.22	3.21	3.19	3.11
138. Justification for the scope and sequence of content for a particular group of students	3.39	3.32	3.38	3.25	3.29	3.29	3.33	3.41	3.36	3.27
139. How to prepare, evaluate, and justify lesson and unit plans for a particular group of students	3.63	3.62	3.67	3.54	3.63	3.59	3.59	3.67	3.67	3.54
How to select, evaluate and use:										
140. Curricular materials and resources (e.g., textbooks, computer software)	3.43	3.22	3.27	3.19	3.29	3.17	3.30	3.21	3.19	3.17
141. Community resources	3.11	2.99	3.03	2.97	2.93	2.95	3.03	3.10	3.17	2.98
142. Instructional media and hardware (e.g., film, television, video)	3.16	2.95	3.00	2.94	2.91	2.93	3.10	2.91	2.78	2.91
143. Equipment and facilities	3.43	3.43	3.51	3.29	3.38	3.30	3.53	3.47	3.53	3.43
C. Instruction										
144. Critical characteristics that influence how a student learns	3.37	3.41	3.45	3.33	3.41	3.38	3.35	3.50	3.14	3.33
145. Prerequisite knowledge, experience, and skills that students need	3.36	3.37	3.41	3.32	3.30	3.34	3.36	3.47	3.17	3.28
146. Ways of presenting/demonstrating/explaining content in Physical Education	3.71	3.79	3.82	3.71	3.81	3.74	3.75	3.83	3.61	3.77
147. Instructional strategies and activities as related to specific objectives	3.63	3.59	3.62	3.55	3.61	3.53	3.58	3.66	3.36	3.52
148. Strategies for motivating and encouraging students to succeed in Physical Education	3.72	3.78	3.81	3.72	3.81	3.79	3.71	3.81	3.83	3.74
149. Classroom management techniques for Physical Education	3.76	3.81	3.85	3.73	3.77	3.74	3.83	3.88	3.89	3.79
D. Assessment										
150. Evaluation strategies used to assess student needs, readiness and performance	3.63	3.61	3.66	3.55	3.60	3.60	3.58	3.71	3.57	3.51
151. Problems in student's performance and knowledge which arise from misconceptions	3.46	3.18	3.28	3.14	3.23	3.12	3.31	3.22	3.23	3.19
152. Values and purposes of evaluation	3.49	3.33	3.41	3.28	3.34	3.30	3.39	3.40	3.31	3.25

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153. Grading practices and procedures	3.36	3.40	3.49	3.24	3.24	3.36	3.46	3.48	3.53	3.26
154. How to select/construct, use and evaluate instruments for particular objectives	3.58	3.49	3.55	3.43	3.47	3.48	3.52	3.53	3.53	3.40
E. Professional Responsibilities										
155. Professional and scholarly literature appropriate for teachers and students	3.36	3.19	3.21	3.21	3.24	3.18	3.29	3.12	2.97	3.12
156. Professional and scholarly organizations for teachers and students	3.47	3.33	3.37	3.32	3.32	3.28	3.45	3.29	3.19	3.31
157. Ethics	3.72	3.63	3.65	3.63	3.63	3.59	3.68	3.65	3.50	3.59
158. Overall importance of Pedagogy Specific to Physical Education	3.55	3.61	3.64	3.56	3.58	3.61	3.60	3.65	3.47	3.53

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